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## **Abstract**

### **Species Energy Theory and Gradients in Ant Community Structure.**

The causes of biogeographic gradients in ant community structure are explored using Species Energy Theory (SET). SET consists of a series of hypotheses, linking climate to NPP, NPP to consumer biomass, biomass to capacity, and capacity to species richness. Fifteen sites representing the range of terrestrial NPP were surveyed in North and Central America (plus one site in Ecuadorian Amazon). Much of the variation in species richness can be linked to biomass gradients. Ant biomass shows a saturating relationship to NPP in open habitats, and an accelerating relationship in forests. Finally, we report on ongoing studies, adding 25 sites to the data set, exploring how temperature regulates access to productivity.

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